may be related to a more restrictive regional approach and does not appear to affect clinical outcomes including 30 day-mortality and recurrent MI.

11:00

791-3 The Influence of Clinical Risk Factors on the Use of Angiography and Revascularization After Acute Myocardial Infarction

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After acute myocardial infarction (AMI), the American College of Cardiology and the American Heart Association recommend angiography in patients "if the prognosis is judged to be poor ... *and* ... outcome can be improved by urgent bypass surgery or coronary angioplasty (PTCA)." In 4823 consecutive survivors of AMI, we examined the relationship between both angiography (n = 2274) and revascularization (n = 692 for PTCA, n = 469 for bypass surgery) and 7 clinical variables that predict mortality (age, recurrent angina, ejection fraction, heart failure, use of thrombolytics, prior infarction, cardiogenic shock).

Multivariate logistic regression revealed that except for recurrent angina, most factors predicting higher mortality were associated with a lower use of angiography (OR(95%CI) = 2.75 (2.39–3.17) for recurrent angina, 0.47 (0.43–0.51) for older age, 0.85 (0.74–0.97) for prior infarction, 0.50 (0.43–0.59) for no thrombolytic treatment, and 0.63 (0.55–0.73) for heart failure during hospitalization). A similar relationship was observed among patients who underwent PTCA (OR(95%CI) = 1.94 (1.53–2.47) for recurrent angina, 0.51 (0.40–0.65) for low ejection fraction, 0.72 (0.57–0.93) for no thrombolytic therapy and 0.74 (0.56–0.98) for history of prior infarction). In contrast, patients with unfavorable prognostic profiles were more likely to undergo coronary bypass surgery (OR(95%CI) = 1.66 (1.34–2.06) for recurrent angina, 1.28 (1.11–1.47) for older age, 2.24 (1.78–2.82) for heart failure, 1.46 (1.18–1.80) for prior infarction and 1.28 for no thrombolytic therapy).

Angiography and PTCA are performed more often in patients who are at relatively low risk for subsequent mortality. Since there is currently no evidence of a survival advantage from PTCA, the risks of this procedure could be avoided in some patients by initially treating them conservatively and subsequently performing PTCA in only those patients whose symptoms are not controlled with medications alone.

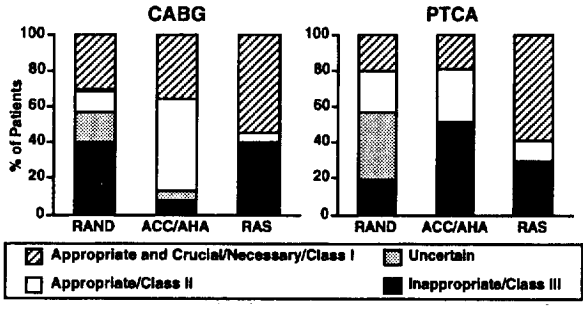
11:15

791-4 Prospective Assessment of Revascularization Appropriateness Scoring Systems: A Comparison of RAND Expert Panel Ratings, ACC/AHA Guidelines, and the University of Maryland Revascularization Appropriateness Score

Michael A. Lauer, Andrew A. Ziskind, Cynthia C. Lemmon, Robert A. Vogel *University of Maryland, Baltimore, Maryland*

Although different scoring systems have been used to evaluate the appropriateness of PTCA and CABG, they have not been directly compared. For 100 patients referred to the catheterization laboratory, we prospectively compared the RAND Expert Panel Ratings, ACC/AHA Guidelines and the University of Maryland Revascularization Appropriateness Score (RAS). The patient population included stable angina (25%), unstable angina (33%), post-MI (27%), acute MI (7%), asymptomatic with + ETT or pre-op (7%), and sudden death (1%). Pts were treated with PTCA (62%), CABG (19%), or medical therapy (19%).

There were significant differences among the 3 systems for PTCA and CABG appropriateness. ACC/AHA and RAS were more definitive in assigning revascularization scores than RAND which yielded uncertain ratings in 17% for CABG and 38% for PTCA. ACC/AHA differed markedly in the Inappropriate/Class III rating for both CABG and PTCA.



Conclusion: Marked differences are present among these 3 scoring systems. Factors contributing to these differences should be clarified before they are widely applied to patient care.

11:30

791-5 Physician Profiles of Coronary Revascularization in the Emory Angioplasty vs Surgery Trial: Understanding Physician Differences Using Resource-based Relative Values

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Understanding the reasons for variations in physician resource utilization in coronary angioplasty (PTCA) and coronary surgery (CABG) is essential to efficiently organizing, managing, and paying for these procedures. To evaluate the extent of variations in physician resource utilization for CABGs and PTCAs and the reasons for these variations, the resource-based relative value scale (RBRVS), an index of relative weights for physician work and practice costs, is used to evaluate physician practice patterns. Given their extensive clinical review, RBRVS weights represent new, unique, comprehensive measures of physician resource utilization where 1 unit value is equivalent to an intermediate office visit for an established patient. Our investigation uses 3 years of clinical and financial data on 392 randomized patients with multivessel coronary artery disease (EAST data), receiving the initial therapy of either CABG or PTCA. RBRVS weights are assigned to each procedure code (CPT) and the distribution of RBRVS units and their allocation among different types of services are analyzed. Results show significant differences in physician resources for both CABGs and PTCAs. Among CABG patients, nearly a ninefold variation in physician resource units is evident (108 ± 46) and, for PTCA, a 29-fold variation exists (66 ± 54). At three years, the average physician resource utilization for CABG is 64% greater than PTCA. Significant differences are also evident in surgical, laboratory, imaging, and consult resources even after accounting for casemix. The findings demonstrate that the RBRVS is a viable and useful analytical tool for managerial and clinical personnel.

11:45

791-6 Prospective Application of RAND Expert Panel Ratings, ACC/AHA Guidelines, and the University of Maryland Revascularization Appropriateness Score (RAS): Only RAS Predicts Clinical Outcome

Andrew A. Ziskind, Michael A. Lauer, Cynthia C. Lemmon, Robert A. Vogel *University of Maryland, Baltimore, Maryland*

Several scoring systems exist for evaluating the appropriateness of PTCA and CABG. However, they have not been prospectively correlated with outcome. We prospectively studied 61 pts referred to the catheterization laboratory who were treated with PTCA (33), CABG (15) or medical therapy (13). Forty-five were male; the mean age was 60.2 ± 12.8 years (range 32–87). During a mean followup of 9.3 ± 3.8 months (range 3–16.1), 66 events occurred in 35 patients including angina (25), MI (3), death (6), cardiac readmission (17), PTCA (4), CABG (7), CHF (4).

For all patients, revascularization appropriateness was ranked by the RAS, ACC/AHA, and RAND Scoring systems. Application of RAS yielded revascularization appropriateness ratings of Necessary (N), Appropriate (A), or Inappropriate (I). Of 11 patients ranked N who did not receive revascularization, 10 had adverse events, compared with 17 of 35 who received revascularization ($p = 0.02$). Of 5 pts ranked I for revascularization who received either PTCA or CABG, 3 had adverse events. In total, 13 of 16 pts who received treatment that was discordant with a N or I RAS rating had adverse events, compared with 20 of 45 who received concordant treatment. ($p = 0.02$). These discordant treatments included unnecessary PTCA (5), failure to perform CABG (1), PTCA (3), or either (7). Statistical significance persisted when only "hard" events (excluding angina) were considered ($p = 0.03$). Concordance of treatment with RAND and ACC/AHA revascularization appropriateness scores for PTCA and CABG were not predictive of adverse events in this population.

Conclusion: Revascularization appropriateness scoring systems differ in their ability to predict outcomes. Of the 3 approaches studied, only treatment concordant with RAS treatment recommendations reduced subsequent adverse events.